

UNITED STATES DEPARTMENT OF AGRICULTURE  
FOREST SERVICE

Manti-LaSal National Forest  
350 East Main Street  
Price, Utah 84501

0005

2820

October 5, 1978

Mr. Jack Moffitt  
Area Mining Supervisor  
Conservation Division  
8426 Federal Building  
125 South State Street  
Salt Lake City, Utah 84138



U-1042235  
Coastal States

Dear Mr. Moffitt:

Attached is the approved EAR for seismic exploration on the Price Ranger District, Manti-LaSal National Forest. Exploration is to be done by Geoterrex Limited, acting as agents for Coastal States Energy Company.

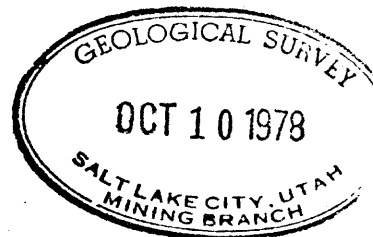
There is still some question concerning the permit procedure and who should administer the activity. By a copy of this memorandum, we are requesting a decision on this issue from our Regional Office. In the interim, we will proceed on the premise you suggested that, "if a lessee is doing exploration for coal by seismic methods within the confines of his lease area," it is a USGS administered project and the Forest Service will not issue the approving permit.

The Forest Service issued permit involves a significant amount of money. If the decision is in favor of the Forest Service, the lessee or his agent will be issued a "Bill for Collection" in the amount involved, and should be so notified.

Sincerely,

for  
REED C. CHRISTENSEN  
Forest Supervisor

Enclosure



ADDENDUM TO BLANKET ENVIRONMENTAL ASSESSMENT REPORT

Coal Exploration

Geoterrex Limited  
Agents For  
Coastal States Energy Company

Price Ranger District  
Manti-LaSal National Forest  
Region 4



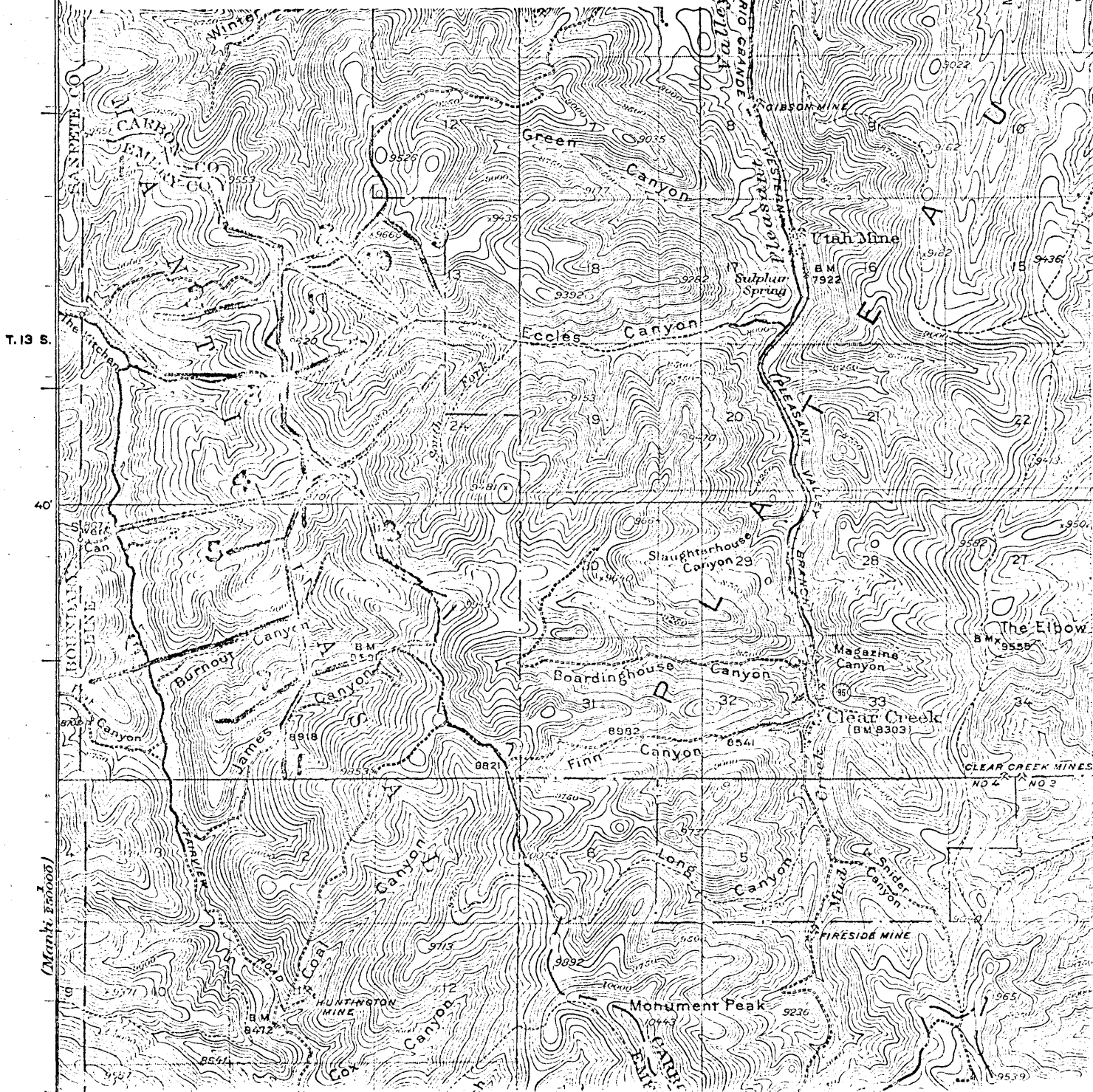
Report  
Prepared By: P. Lynne Jackson Date 9/15/78  
Physical Science Technician

Approval of Report  
Recommended By: John W. Hatch Date 10/3/78  
District Ranger

Report  
Approved By: William D. Bailey Date 10/4/78  
for Forest Supervisor

This topographic map depicts the Clear Creek region in Arizona. Key features include:

- Geographical Features:** Sulphur Spring, Sochield, Utah Mine, Magazine Canyon, Clear Creek, and various smaller canyons like Pleasant Valley Branch and Snider Canyon.
- Elevation and Contours:** Contour lines are shown throughout the map, with specific elevation points marked (e.g., 9252, 9122, 9123, 9500, 9550, 9541, 9226, 9651, 9539).
- Mines and Landmarks:** Labeled mines include Gibson Mine, Utah Mine, Magazine Canyon, Clear Creek (BM 8303), Fireside Mine, and The Elbow (BM 9550).
- Infrastructure:** A road is shown running vertically through the center, and a railroad line is visible at the bottom.
- Other Labels:** "RIO GRANDE" is written vertically on the left, and "CLEAR CREEK MINES NO 4 NO 3" is written near the bottom right.



## I. Description

Geoterrex Limited of Denver, Colorado, acting as agents for Coastal States Energy Company, has proposed to run approximately 20 miles of high resolution reflection seismic surveying for the purpose of coal exploration and mapping on Federal Coal Leases U-0142235, U-073120, U-0147570, U-020305, and U-044076.

In addition to the reflection survey they have also proposed to simultaneously conduct a seismic refraction survey for the purpose of obtaining velocity information for the different rock units which will be used in the interpretation of the seismic reflection data.

The location of the survey covers Township 13 South, Range 6 East, sections 10 - 15, 22-27, and 34-36, which are found in Carbon and Emery counties. This is in the general region of Greens Canyon, Eccles Canyon, Trough Spring Ridge, and Winter Quarters Ridge. The survey consists of eleven lines totaling approximately 20 miles.

The reflection survey will be conducted using the new MINI-SOSIE system which is a relatively light weight high resolution seismic system ideal for shallow exploration in environmentally sensitive areas. The energy source is a common earth tamper weighing 150 pounds. The earth tamper is a spring mounted gasoline powered Whacker, model GVR-151-Y, capable of producing up to 10 impulses per second, and of developing an input energy of 495 ft lbs/sec.

Approximately 1500 impulses are needed at each tamping station in order to get satisfactory results. The tamping stations are spaced 66 feet apart along the geophone lines. The recording unit is housed in a Chevrolet Suburban vehicle. The crew will consist of ten people; three Ford F-250 4x4 trucks, the recording truck and a helicopter. The earth tamper, geophones and cables are carried by the 4x4 vehicles as far as possible on existing roads to a pre-determined helispot. From this staging area a helicopter will shuttle men and equipment to and from the survey lines. The Company estimates a production rate of approximately one mile per day.

The refraction survey will be conducted using a portable SIE RS-44 system using small charges of dynamite as the energy source. One ounce of Dupont "Tovex" explosive will be buried in a shallow, hand-augered shothole, 12 to 18 inches deep. The same crew and equipment will conduct the refraction survey. Since the refraction survey is being conducted only to obtain velocity information on the individual rock units of the area, it will not be necessary to survey the entire 20 miles of the reflection survey. The survey will be conducted over very short intervals of length wherever a particular formation needs to be velocity tested. The Company has proposed a maximum of Twenty-five shot points for this purpose.

It is anticipated that the reflection survey will take approximately one month with the refraction survey running an additional 3 - 4 days.

## II. Description of Existing Environment

The area under discussion lies almost entirely within the Intermediate Zone of the District's Multiple Use Plan.

### 1. Topography

The topography of the area is characterized by a high, relatively narrow, north-south trending ridge, with several major canyons running east and west, draining the ridge top. The ridge top consists of small rolling hills and meadows which in turn give way to fairly deep, narrow canyons on either side. The ridge and its subordinate canyons are bounded on the west and south by Huntington Canyon and on the east by the Pleasant Valley Creek. The elevation ranges from 10,433 feet at Monument Peak to 8500 feet in the bottom of Huntington Canyon to the west.

### 2. Geology

The area is situated on the western flank of the north-south trending Pleasant Valley Anticline which gives the rock units a westward dip. The area is cut by two large north-south trending faults on either side of the ridge and by several small faults running down the middle of the ridge.

The formations are all sedimentary in origin and consist of the Star Point Sandstone, the Blackhawk Formation, the Castlegate Sandstone, and the Price River Formation in ascending order.

### 3. Vegetation

Vegetative cover occurs under four district types. They are: (1) mixed conifer, (2) aspen, (3) sage-grass forb, and (4) chokecherry. The conifer consist of apline fir, Douglas fir, white fir, and spruce mostly occurring on steep slopes.

The aspen are generally found on moderate to steep slopes and are occasionally mixed with conifers and sage-grass. The aspen stands provide extensive big game and grouse habitat. The sage-grass forb covers the most extensive area and is generally found on moderate to steep slopes. This vegetative type is extensively grazed by livestock as it supports the bulk of forage for them. Chokecherry occurs near the tops of moderate to steep upper slopes and serves as important wildlife habitat and watershed cover.

THERE ARE NO THREATENED OR ENDANGERED PLANT SPECIES KNOWN TO OCCUR ALONG THE PROPOSED SURVEY LINES.

4. Wildlife

Wildlife in the area consists generally of deer, elk, sage-grouse, snowshoe and jack rabbits, ground squirrels, and gophers.

THERE ARE NO THREATENED OR ENDANGERED WILDLIFE SPECIES KNOWN TO INHABIT THE AREA OF THE PROPOSED PROJECT.

5. Soils

Soils in the area vary from loam to clay loam and are moderately stable. They are deep, very fine-grained and well developed in valley bottoms and shallow, coarser grained and not as well developed on steep side hills and ridge tops.

6. Water Influence Zone

Water influence zones found in the area are considered important for the production of forage used by domestic livestock and wildlife. Most of the recreation on the District, aside from game hunting, is more or less concentrated in and around the water influence zones. The major water influence zones in the area are the live streams in Eccles and Upper Huntington canyons and Electric Lake.

7. Recreation

Recreation is confined largely to the hunting of deer, elk and sage grouse and to a lesser extent the hunting of predators such as black bear, cougar and coyotes. Other forms of recreation include fishing, camping, boating, hiking, and horseback riding in the summer and snowmobiling and cross-country skiing in the winter.

8. Range Improvements

Range improvements in this general area consist of fences, watering troughs and a reseeding operation conducted near Winter Quarters Ridge.

9. Domestic Livestock

The area serves as summer range for approximately 4450 head of livestock from July 1 to September 30.

#### 10. Watershed and Hydrology

Watershed conditions in the area overall are good with the exception of small, isolated areas near the heads of drainages where trailing or overgrazing by domestic livestock and game animals has occurred. Hydrologic conditions are also good with the bulk of sub-surface drainage being directed westward, down the dip of pervious layers, into Upper Huntington Canyon.

#### 11. Minerals

Mineral activity in the area has been largely confined to prospecting for coal, gas and oil; all three of which have been located and produced in (or very near) the area.

#### 12. Archeology

Numerous archeological sites, associated with the Fremont Indian Culture, have been identified in the region. Most of these are located in the lower valley areas and none have been identified in the vicinity of the survey. However, in compliance with the National Historic Preservations Act and the Antiquities Act, Geoterrex will be required to perform an archeological and historical reconnaissance of the proposed seismic survey area.

### III. Environmental Impacts

District personnel are unfamiliar with these types of energy sources; therefore, it will be necessary for Geoterrex to give a demonstration of these techniques to the proper Forest Service representatives. At that time, the Forest Officer in charge will make an assessment of the tamping and blasting impact and a decision will then be made as to whether or not this type of operation will be environmentally feasible to be conducted on Forest Service land.

The following are anticipated impacts posed by this activity as inferred from discussions of this technique with Geoterrex representatives. All underlined sentences are coordinating requirements which Geoterrex will be expected to conform with.

1. There will be some dust pollution due to increased travel along dirt roads which become dry and dusty during periods of little precipitation. There will also be dust pollution and air borne particulate matter associated with the operation of the tamping device, the helicopter and the blasting activity. This will slightly reduce the air quality in the immediate area for a short period of time.

DUST AND SMOKE POLLUTION WILL BE HELD TO A MINIMUM BY REDUCING TRAVEL TO ONLY THAT NECESSARY TO ACCOMPLISH THE PROJECT.

2. The tamping operation will cause disturbance of the soil and vegetation in the area immediately under the tamping device. The vegetation will be broken and crushed and the soil compacted in an area of approximately four square feet at each tamping station. Total area of disturbance for 1600 tamping sites, along the 20 miles of line, will amount to approximately 6400 square feet or .15 of an acre. The refraction survey blasting activity will also impact soil and vegetation due to the hand augering and blasting of the shot holes. Soil and vegetation disturbance will also occur at the helipad. Soils will be compacted and existing vegetation will be crushed.

DISTURBED AREAS WILL BE PROMPTLY REVEGETATED WITH A PRESCRIBED SEED MIX.

3. Drill tailings from the hand-augered shot holes may form sterile areas on the surface around the holes. The underground detonation of explosives, even though very shallow, may cause the surrounding soil to settle back into the hole as an uncompacted mass, resulting in a small pothole forming on the surface.

COMPLETE CLEANUP OF STERILE SOIL AROUND THE SHOT HOLES AND FILLING IN OF ANY SUBSIDED AREAS WILL BE REQUIRED.

4. The impact on water will be minimal. There are numerous live springs and streams in the area which could be impacted by the blasting and tamping activities.

THESE AREAS WILL BE AVOIDED TO PREVENT POSSIBLE IMPACTS. THERE WILL BE NO BLASTING OR TAMPING WITHIN 50 FEET OF ANY SPRINGS OR STREAMS.

5. Wildlife will be temporarily disturbed by the blasting activity, the noise produced by the gas powered mechanical tamper, and the constant flying and hovering of the helicopter.

NO INTENTIONAL HARASSMENT OF THE WILDLIFE WILL BE PERMITTED.

6. Fire danger is very high during the dry summer and fall seasons. Use of explosives will provide additional hazards. Increased human activity also increases the likelihood of fire.

PROVISIONS WILL BE MADE TO ADEQUATELY PREVENT OR CONTROL ANY FIRES RESULTING FROM THIS ACTIVITY.

7. There is the possibility that trash and debris will be left along the survey lines impairing the natural beauty of the area. The natural beauty will also be temporarily degraded by the presence of men and equipment in the area.

ALL TRASH, DEBRIS, AND FLAGGING WILL BE REMOVED FROM THE FOREST.

8. This operation may seriously damage road surfaces through rutting if the 4x4 vehicles travel the roads during wet periods. The roads may also be damaged during dry periods by pulverizing the road surface. The use of 4x4 vehicles provides a temptation for off-road vehicle travel which can be very damaging to sensitive areas.

ANY DAMAGE TO ROADS CAUSED BY THIS OPERATION WILL BE REPAIRED BY THE COMPANY. ABSOLUTELY NO OFF-ROAD VEHICULAR TRAVEL WILL BE ALLOWED.

9. This operation may also temporarily block the roads while operating near them. Because these roads are heavily used by recreational vehicles during the dry seasons there may be traffic hazards and obstructions. The dynamiting may also present hazards to the recreational users of the area.

ADEQUATE SIGNING ALONG WITH FLAG PERSONS WILL BE UTILIZED TO WARN AND RESTRICT PEOPLE FROM DANGEROUS AREAS.

#### IV. Adverse Environmental Impacts Which Cannot Be Avoided

1. Some temporary localized air pollution in the vicinity of the activity
2. Erosive processes which are accelerated anywhere the protective vegetative cover is removed on the soil disturbed.
3. The presence of men and equipment will temporarily disturb the solitude of the wildlife. There will also be some temporary loss of habitat.
4. Areas where soil and vegetation are disturbed will temporarily impact the wildland aesthetics.
5. Concentration of men, equipment, and explosives will pose an added fire hazard.
6. Movement of recreational traffic and domestic livestock will be impaired and more hazardous in the area during the life of the proposed activity.

V. Relationship Between Local Short-Term Users of Man's Environment And Maintenance And Enhancement of Long-Term Productivity.

Seismograph exploration in itself will not have any long-term effect on the productivity of this wildland environment. However, exploration and mapping by their very purpose may lead to full scale development of the coal resources in this area. It is not within the scope of this analysis to dwell on the effects of coal-field development, for those effects will be evaluated under a separate Environmental Analysis Report.

VI. Irreversible and Irretrievable Commitment of Resources.

Seismograph exploration or mapping does not create a long-term alteration or commitment of natural resources which cannot be reasonably restored. Prompt revegetation and stabilization of disturbed areas fully mitigate most of the unavoidable environmental impacts.

VII. Analysis of Alternatives.

1. Allow No Seismograph Exploration on the Manti Division.

There are known deposits of coal on the Manti Division. The Price District has several producing coal mines of significant production. The discovery and development of coal has created an interest in discovery and development of other coal fields in the area.

Seismograph exploration serves as a useful tool in mapping and can be conducted on the Manti Division under proper conditions without posing irretrievable impacts. Not allowing investigation and mapping of coal resources is not consistent with past policy and coal leasing regulations.

2. Permit Unrestricted Seismograph Exploration.

This alternative could result in adverse irretrievable impacts. These impacts are easily mitigated by coordinating constraints.

3. Restrict Seismograph Exploration to Areas Where Impacts Can Be Mitigated.

This alternative will allow seismic activity on existing roads and allow some off-road exploration where conditions warrant it.

This alternative proves to be the most reasonable solution when coordinating this activity with other resource values.

#### VIII. Consultation With Others

This proposal has been closely coordinated with the Forest Service plant and wildlife specialists in the Supervisor's Office.

The location and operations of the project will be closely monitored by the Forest's Fire Organization.

#### IX. Management Recommendations and Constraints

1. Approve this project.
2. All underlined sentences in the body of the report are coordinating requirements.
3. The Prospecting and Surface Management Plan will be attached to and become a part of this Environmental Analysis Report. It contains the functional requirements for the proposed project.

U.S. Department of Agriculture  
Forest Service

Prospecting and Surface Management Plan

Coastal States Energy Company  
(Geoterrex Limited, Agents)

This prospecting and surface management plan applies to 20 miles of exploratory geophysical surveying to be conducted on Federal Coal Leases U-0142235, U-073120, U-0147570, U-020305, and U-044076.

The blanket Environmental Analysis Report Coal Exploration, and the Supplemental Environmental Analysis Report for this proposal describe environmental impacts of the proposed action.

Section number 5 of the Coal Lease (form 3130-1) and Stipulation for Lands Under Jurisdiction of the Department of Agriculture (form 3103-2) set forth general mitigating measures to protect the environment.

The following mitigating requirements are specific to this seismic surveying program:

A. Access

Access to the survey lines will be by either of the following methods:

1. Existing roads.
2. Helicopter.

Existing roads, notably Eccles Canyon, Kitchen Canyon, upper Huntington Canyon, Winter Quarters Ridge, and Trough Springs Ridge roads, will serve most of the survey lines. Coordinating requirements for existing roads are:

1. Travel by heavy equipment or 4 X 4 vehicles is prohibited during inclement weather or when the roadbed is soft and rutting unavoidable.
2. To avoid pulverizing the roadbed and dissipating the fine material, watering may be required during dry spells.

3. Traffic warning signs and flag persons will be posted above and below any work sites adjacent to the road to provide for public safety.

The specific roads along which vehicular will be allowed are the following:

1. The road from Electric Lake north through upper Huntington Canyon into Kitchen Canyon area.
2. The road from Kitchen Canyon over and into Eccles Canyon.
3. The road traversing the length of Trough Springs Ridge.
4. The Greens Canyon road.
5. The road traveling north out to Winter Quarters Ridge from the Kitchen Canyon - Eccles Canyon road junction.

Vehicular travel will not be allowed on any previously closed out roads.

B. Disturbed Areas

Upon completion of the survey all areas disturbed by the earth tamper and the blasting activity will be reseeded with the following mix:

- 3 lbs. Smooth brome
- 3 lbs. Timothy
- 2 lbs. Orchard grass
- 2 lbs. Intermediate wheatgrass
- 1 lb. Kentucky bluegrass
- 1 lb. Ranger alfalfa
- 1 lb. Meadow foxtail
- 1 lb. Slender wheatgrass

The rate shall be at least 14 pounds per acre. The permittee is responsible for obtaining a successful and acceptable stand of vegetation on all disturbed areas. An acceptable stand of vegetation is defined as at least 50 percent ground cover.

Any sterile drilling material from the hand-augered shot holes will be scraped back into the hole or hauled off the Forest.

Any subsided areas or potholes resulting from the blasting will promptly be refilled and covered.

C. Pollution

All debris, trash, flagging, etc., will be hauled off the National Forest and properly disposed of.

There will be no tamping or blasting within 50 feet of any live water, such as springs, streams, and lakes.

D. Livestock and Wildlife

The seismic operations will not interfere with livestock management. Gates will be kept closed, fences will not be damaged, and cattle guards will be maintained.

Wildlife will not be intentionally harassed in any way.

E. Archeological

In the event artifacts of historical or cultural value are unearthed during the operation, the operation will be immediately stopped and the Forest Officer in charge notified.